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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/528,832	03/23/2005	Valerio Tognazzo	A-9494	3737

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EXAMINER

WU, IVES J

ART UNIT	PAPER NUMBER
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1797

MAIL DATE	DELIVERY MODE
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10/09/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/528,832	Applicant(s) TOGNAZZO, VALERIO	
	Examiner IVES WU	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28,30,31 and 58-74 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3,4,6,7,9,12-28,30 and 31 is/are allowed.
- 6) ☒ Claim(s) 1-2,5,8,10-11,58-74 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

(1). Applicants' Amendments and Remarks filed on 08/04/2008 have been received. Claims 1, 3-4, 6, 12, 17, 31, 58, 68 are amended. Claims 29, 32-57 are cancelled before. The objection of claims 58, 68 in prior Office Action dated 02/04/2008 is withdrawn in response to the current Amendments.

The rejections of claim 1 in prior Office Action dated 02/04/2008 is revised in response to the current Amendments and presented with rest of the claims in the following.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

(2). **Claims 1-2, 5, 58-74** are rejected under 35 U.S.C. 103(a) as being unpatentable over Starr et al "The capture of airborne particles by water drops and simulated snow crystals", *Quart. J. Roy. Meteor. Soc.* 92:490 (1966), in view of Haruch (US04343434) and Tognazzo (US05310411A).

As to step of causing a flow of unpolluted water to a sprinkle wash within a snow producer and subjecting the water, to rapid cooling to a temperature sufficient to transform it into snow flakes in a process in **independent claim 1**, Starr et al "The capture of airborne particles by water drops and simulated snow crystals" disclose the capture of particulate matter by falling raindrops and snowflakes to be important in the removal of industrial pollutants, radioactive debris, biological organisms and dust from atmosphere. The physics of the problem is also relevant to the suppression of dusts by water sprays and the functioning of spray towers. The experiment now to be described was designed to measure the collection efficiency of simulated snow crystals for solid particles a few microns in radius (Introduction, 1st, 2nd paragraphs). Water drops from microburette, An approach their terminal velocities while falling through the glass tube B, and then enter the tube C which is filled with cloud of particles (page 451, 3rd paragraph), which reads on the sprinkle wash by unpolluted water as claimed because the polluted water would not provide accurate results. Starr et al "The capture of airborne particles

Art Unit: 1797

by water drops and simulated snow crystals" **do not teach** the snow making by rapid cooling of unpolluted water as claimed.

However, Haruch (US04281518) **teaches** air efficient atomizing spray nozzle (Title). Thus, when this nozzle is utilized for making snow the chosen spray pattern exits from the nozzle orifice and freezes immediately into minute ice crystals (Col. 6, line 8-11).

The advantage of making snow by atomizing nozzle is the ability to operate effectively without the addition of pressurized air, or to use as much, or as little air, as necessitated by the degree of atomization desired, from relative coarse spray particle size afforded by straight hydraulic operation, to the very fine atomized spray particles afforded by added air atomization – wide range of size is controllable (Col. 2, line 3-9).

Therefore, it would have been obvious at time of the invention to carry out experiments of Starr et al by making snow in the spray tower disclosed by Haruch in order to get advantage cited above.

As to step of striking a stream of fumes or gas and water drops containing micropollutants coming from a previous washing process with the snow flakes, causing crystallization of drops on snow flakes and the collection of micropollutants by the snow flakes in **independent claim 1**, Starr et al "The capture of airborne particles by water drops and simulated snow crystals" disclose the capture of particulate matter by falling raindrops and snowflakes to be important in the removal of industrial pollutants, radioactive debris, biological organisms and dust from atmosphere. The physics of the problem is also relevant to the suppression of dusts by water sprays and the functioning of spray towers. The experiment now to be described was designed to measure the collection efficiency of simulated snow crystals for solid particles a few microns in radius (Introduction, 1st, 2nd paragraphs), it would include the step of striking a stream of fumes as claimed.

As to step of discharging from snow producer said snow flakes being reached the base in **independent claim 1**, it would have been obvious to have outlet for discharging in the devices such as spray tower based on continuous operation of engineering practice.

As to step of feeding the resultant polluted water derived from snow flakes to a gasifier in **independent claim 1**, Starr et al "The capture of airborne particles by water drops and simulated snow crystals" **do not teach** the gasifier as claimed.

However, Tognazzo (US05310411A) **teaches** the process and machine for the transformation of combustible pollutants of waste materials into clean energy and usable products (Title). An aim is to optimize the gasification method.

The advantage of gasification is to transform combustible pollutants or waste materials into clean energy and utilizable products (Col. 1, line 8-10, 35-41).

Therefore, it would have been obvious at time of the invention to install the gasification device of Tognazzo in the spray tower of Starr et al in order to obtain the cited advantage.

As to process for ultra-purifying fumes or gases with total recovery of the resultant pollutants in **independent claim 1**, the disclosure of the reference meets the requirements of present claim both in terms of the elements and their configurations. It is reasonable to presume that the combined teaching of reference would fulfill the same utility of ultrapurifying fumes or gases with total recovery of the resultant pollutants as presently claimed in light of their design similarities. The burden is shifted to Applicants to establish that the present claim is not the same as or obvious as that set forth by the reference.

(3). **Claims 2, 5, 58-74** are rejected under 35 U.S.C. 103(a) as being unpatentable over Starr et al "The capture of airborne particles by water drops and simulated snow crystals", *Quart. J. Roy. Meteor. Soc.* 92:490 (1966), in view of Haruch (US04343434) and Tognazzo (US05310411A) for the same rationale recited in prior Office Action dated 02/04/2008.

(4). **Claims 8, 10-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Starr et al "The capture of airborne particles by water drops and simulated snow crystals", *Quart. J. Roy. Meteor. Soc.* 92:490 (1966), in view of Haruch (US04343434) and Tognazzo (US05310411A), further in view of Müller et al (US04281518), further evidenced by Fukuta (US5628455A) for the same rationale recited in prior Office Action dated 02/04/2008.

Allowable Subject Matter

(5). **Claims 3-4, 6-7, 9, 12-28, 30-31** are allowed.

Response to Arguments

Applicant's arguments filed on 08/04/2008 have been fully considered but they are not persuasive.

Applicants amend instant claim 1 to include water drops containing micropollutants. However, it is presented in instant claim 1 as optional because "fumes **or** *gas and water drops containing micropollutants coming from a previous washing process*" are different inputs. Therefore the teaching of Starr et al still meets the limitations of instant claim.

As to arguments of no disclosure on **how to modify** Starr's process to obtain ultrapurifying, the combined teaching of Starr et al and Haruch (US 4343434) meet the **limitations** of the instant claim, it would be able to perform ultrapurifying conceptually.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IVES WU whose telephone number is (571)272-4245. The examiner can normally be reached on 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner: Ives Wu

Art Unit: 1797

Date: October 3, 2008

/Duane S. Smith/
Supervisory Patent Examiner, Art Unit 1797

<div><i>Application Number</i></div> <div></div>	Application/Control No.	Applicant(s)/Patent under Reexamination	
	10/528,832	TOGNAZZO, VALERIO	
	Examiner	Art Unit	
	IVES WU	1797	